Claims

1 – 22 (Cancelled)

23. (Currently Amended) A fan assembly for processing materials, the fan assembly comprising:

two circular side members circumscribing a hollow hub through the center;

a plurality of fan blades secured between the circular side members to form radial channels extending from the hub such that materials that enter into the hub flow through the radial channels, out the circumference of the fan assembly, the fan blades having secured to at least one side a layer of plates made of a material harder than the material of the fan blades, the plates being in an alternating adjacent ~~arranged~~ arrangement to form irregular seams; and

a layer of tiles of the same material as the plates secured along the intersection of the fan blades and circular side members, the tiles being in an alternating adjacent ~~arranged~~ arrangement to form irregular seams, the plates and tiles being capable of flexible movement in relation to other plates and tiles so as to prevent breaking or cracking of the plates and tiles when the fan assembly is in motion.

24. (Previously presented) The fan assembly of Claim 23 wherein the irregular seams formed by the tiles cause turbulence in and slow the rate at which the materials are projected through the channels.

25. (Previously presented) The fan assembly of Claim 23 wherein the plates are arranged on the fan blades so as to form irregular seams that cause turbulence in and slow the rate at which the materials are projected through the channels.

26. (Previously presented) The fan assembly of Claim 23 wherein the plates and tiles are composed of a metal carbide.

27. (Previously presented) The fan assembly of Claim 23 wherein the plates and tiles are composed of a ceramic material.

28. (Currently Amended) The fan assembly of Claim 23 further comprising an adhesive substance to secure~~ing~~ the plates and tiles to the fan ~~by means of an adhesive substance~~.

29. (Currently Amended) The fan assembly of Claim 23 further comprising means for securing the plates and tiles to the fan by ~~means of~~ brazing.

30. (Previously presented) The fan assembly of Claim 23 further comprising securing a substrate between the fan blade and the plates.

31. (Previously presented) The fan assembly of Claim 23 wherein all exposed edges of the tiles and plates adjoining the fan blade and side members are sealed.

32. (Previously Presented) A method of prolonging the life of a rotating fan assembly having circular side members with a plurality of fan blades secured between the side members to form radial channels, the method comprising the steps of:

securing a layer of plates to at least a face of a blade of the fan assembly, the plates of a harder material than the material of the blade, the plates arranged to form a pattern of irregular seams, the plates being capable of flexible movement in relation to each other; and

securing a layer of tiles of harder material along at least a portion of at least one joint of the fan blade and the side members to form an "L" shape along the length of the joint, the tiles having front and back faces, top and bottom ends and left and right sides, the tiles being arranged such that:

a first tile of a first pair of tiles is positioned substantially vertically along the circular side member, with the back face of the tile adjacent to the circular side member, and the bottom edge abutting the plates on the blade, a second tile of the first pair positioned substantially horizontally along the plates on the blade, with the back face of the tile adjacent the plates, and the top edge of the tile abutting a portion of the front face of the first tile;

a second pair of tiles arranged such that a first tile of the second pair is positioned substantially horizontally along the plates on the blade, with the back face of the tile adjacent to the plates, the top edge of the first tile of the second pair abutting the circular side member, a second tile of the second pair positioned substantially vertically along the circular side member, with the back face of the second tile of the second pair adjacent the circular side member, the bottom edge of the second tile of the second pair abutting a portion of the front face of the first tile of the second pair; and

alternating first and second pairs of tiles along the length of the joint to form an irregular seam, the tiles being positioned so as to be capable of flexible movement in relation to each other and the plates.

33. (Previously presented) The method of Claim 32 wherein all tiles are of approximately a same size so that the outside ends of the "L" shaped joint form an irregular edge.

34. (Previously presented) The method of Claim 32 wherein the length of the tiles of the second set are shorter than the tiles of the first set by an amount approximately equal to a thickness of the tiles so that the outer ends of the "L" shaped joint form a substantially even edge.

35. (Previously presented) The method of Claim 32 further comprising sealing the edges of the tiles along the outside edges of the "L".

36. (Currently amended) A method of prolonging the life of a rotating fan assembly consisting of circular side members having a plurality of fan blades secured between the circular side members to form radial channels, the method comprising the steps of:

securing a layer of plates of a hardened material to at least a face of a blade of the fan assembly, the plates arranged to form a pattern of irregular seams, the plates being capable of flexible movement in relation to each other;

securing a layer of tiles of harder material of different sizes along at least a portion of at least one "L" shaped joint formed by the intersection of the fan blade and the circular side members, the tiles having front and rear faces, left and right sides and top and bottom edges, the tiles being positioned such that a row of tiles is positioned with their rear face adjacent the circular side member, and a second row of tiles is positioned with their rear face adjacent the plates secured to the blade; and

arranging ~~the~~ adjacent tiles in a staggered manner in respect to each other so as to form an irregular seam at the inside angle of the "L" shaped joint to slow a flow of materials projected through the channels, the tiles being capable of flexible movement in relation to other tiles and the plates so as to prevent breaking or cracking of the plates and tiles.

37. (Previously presented) The method of Claim 36 wherein the tiles are arranged so that the edges of the tiles projecting out from the "L" form a substantially straight line.

38. (Previously presented) The method of Claim 36 wherein the tiles are arranged so that the edges of the tiles at the outside of the "L" shaped joint form a non-even line.

39. (Previously presented) The method of Claim 36 further comprising sealing the edges of the tiles at the outside edges of the "L" shaped joint.